

# VIGILANT

Powered by SDT

Online  
Condition  
Monitoring

Be Vigilant over  
your critical assets

- Ultrasound
- Vibration
- Temperature
- Tachometer
- Process



Ultrasound Solutions

[bevigilant.io](http://bevigilant.io)

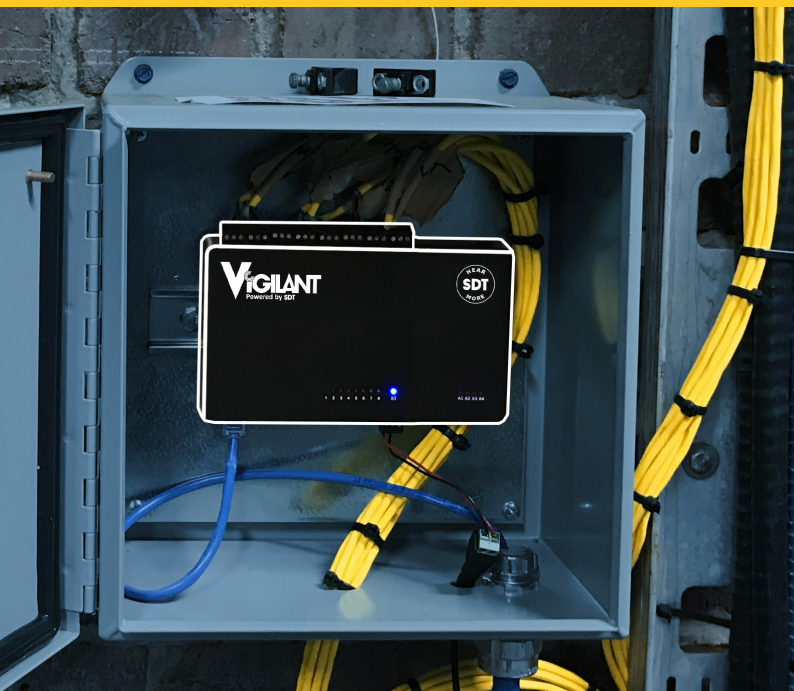
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A turn-key condition monitoring solution combining the versatility of ultrasound, the analytics of vibration, standard communication protocols and an embedded trending and analysis software.



## Configure Vigilant to any Critical Asset

Vigilant is a flexible data collection pod. Input any combo of eight ultrasound and vibration sensors and receive continuous feedback from your assets.

4 channels for Temperature, Tach and Pressure create an all-in-one solution for critical and guarded assets.

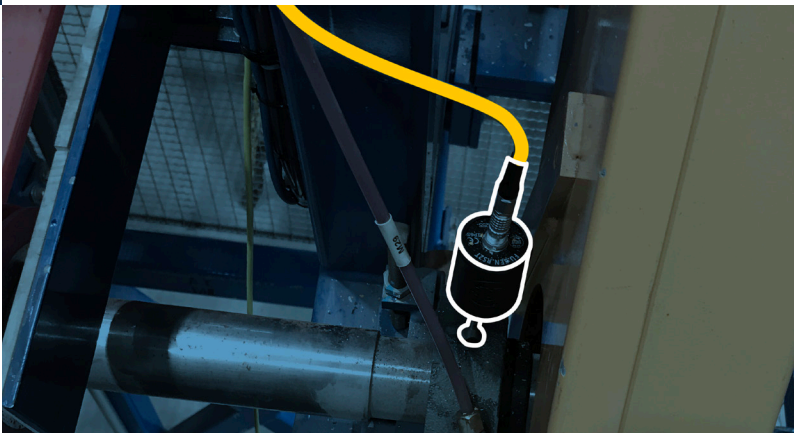
## Designed for COMMONSense

Vigilant accepts data from commonly available sensors including the COMMONSense Sensors from SDT, designed to provide repeatability in any industrial environment.



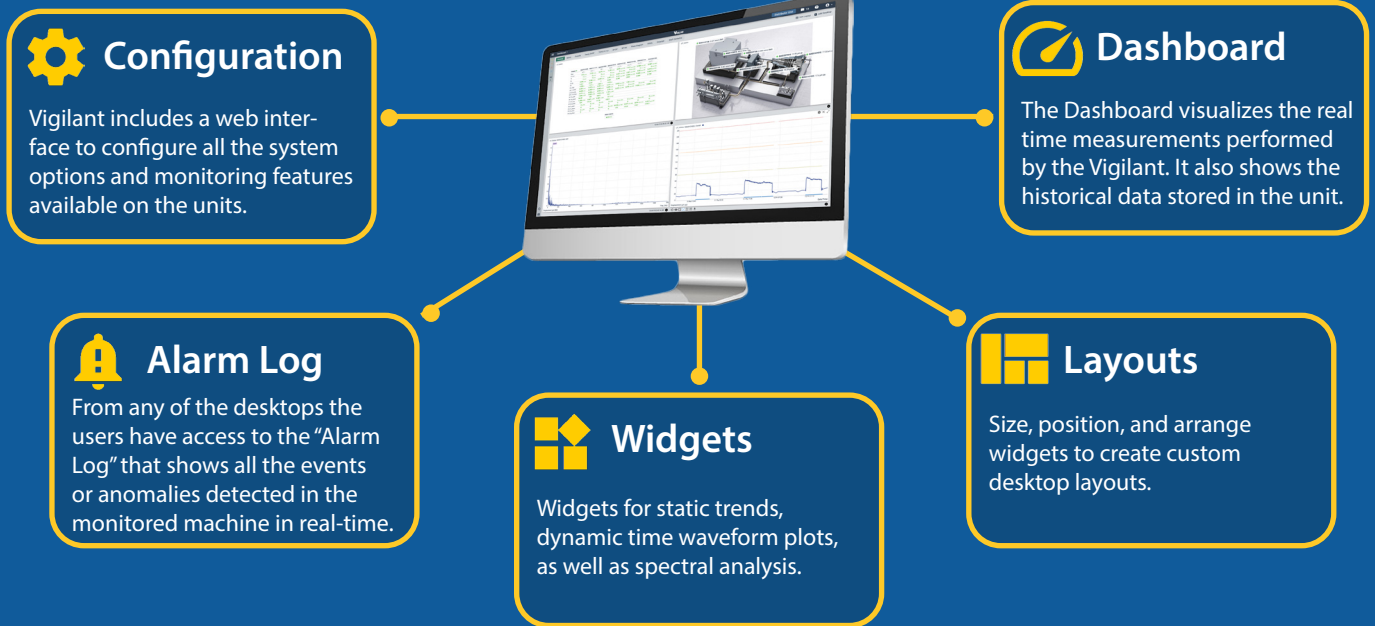
## Vigilant Highlights:

- 8 channels (Ultrasound or Vibration)
- 4 channels (Temp/Tach/Process)
- Embedded data management software
- Trends/Spectrum/Waveform/Waterfall
- Open communications protocol
- Static and Dynamic data



# Embedded Data Management Software

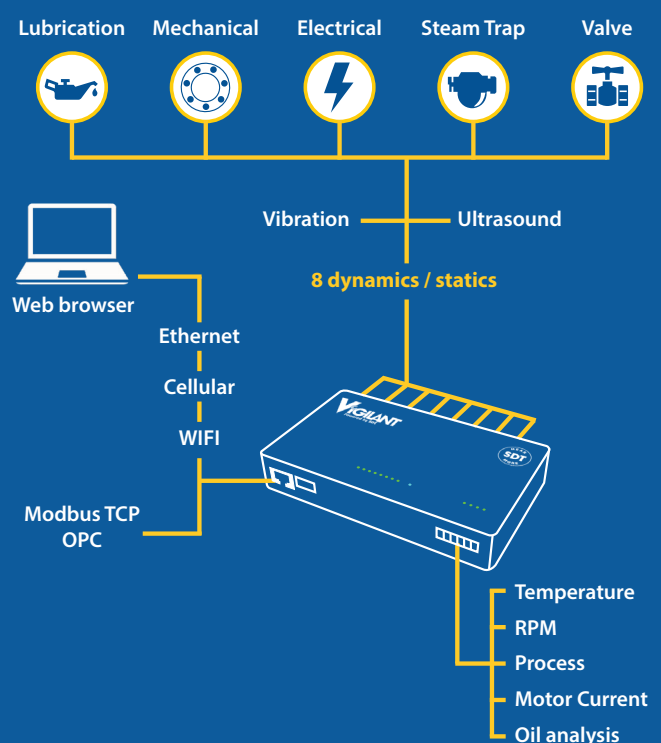
View the status of any asset from the security and convenience of your favourite web browser.



Vigilant manages both Static and Dynamic ultrasound data. This creates an opportunity to establish long-term trending, analysis, and diagnosis at the earliest point in the failure curve.

## Applications

- Early detection of rolling element bearing faults (especially in slow speed applications);
- Status of couplings on critical assets in limited access locations;
- Monitor guarded assets such as robotics or CNC machine centres;
- Lubrication status of roller bearings;
- Valves deemed critical to a process;
- Detection of partial discharge in electrical assets such as MCC panels and switchgear cabinets;
- Detection of friction or impacting in linear motion applications;
- Detection of turbulence produced by cavitation in pumps and valves;
- Detection of hydro-cyclones used in mining processes.



# Vigilant Hardware Versions

## Vigilant Permanent



- 8 high-speed (Dynamic) multipurpose analog inputs;
- 4 channels (Temp/Tach/Process);
- ICP power source available on all dynamic inputs;
- Ethernet TCP/IP communications;
- Powered at +24 Vdc.



## Vigilant Mobility

- Same function as Vigilant Permanent;
- Packaged in rugged, custom waterproof case;
- Designed to travel to off-site assets;
- Install on assets in alarm to closely monitor until planned shutdown.

## Technical Specifications

General		Signal acquisition: Main inputs	
Function	Multi-channel acquisition system	Sampling rate	Up to 51 200 Hz
Main dynamic inputs	8 channels (ultrasound & vibration)	DC range	± 24 V
Auxiliary static inputs	4 channels (static & tachometers)	AC range	24 Vpp
USB port	1 Host, used as power supply only	IEPE Sensors drive current	5.5 mA @20 V
Status indicators	13x RGB LED	ADC resolution	16 bits
Power supply	20-26 Vdc, 24 Vdc nominal (220 V AC with the mobility case)	Input configuration modes	Dynamic, Static, Digital, Pulse train
Power consumption	<12 W	Harmonic distortion	-70 dB
System features		Accuracy	1 %
Configuration system	Integrated local webserver application	Dynamic range	110 dB
CPU	ARM Cortex™-A9 Quad Core (NVIDIA® Tegra™ 3)	Gain	0 to 42, range of +6
Storage capacity	4 GB, Micro-SD card, format ext3	Points type	Dynamic (preferred), Static, Tachometer
Network interface	Ethernet 10/100	Signal acquisition: Auxiliary inputs	
Industrial communication	MODBUS TCP/IP (client and/or server) & OPC UA (option)	Sampling rate	Up to 200 Hz
Mechanical features		DC range	± 24 V
Mounting	Standard 35 mm DIN rail	ADC resolution	16 bits
Sensor interface	3-pole pluggable terminal block provided with the unit	Power output	+24 V
Size	LxHxW: 162x95x27 mm / ~6.38x3.74x1.06 in	Input configuration modes	Static, Pulse Train (A1 and A2 only)
Weight of the unit	0.55 kg / 19.4 oz	Accuracy	1%
Operating temperature range	-30 to +44.5 °C / -22 to 111.2 °F, non-condensing	Gain	0 to 30, range of +6
Humidity	95% RH	Points type	Static, Tachometer (A1 and A2 only)
		Signal processing	
		Spectral lines	Up to 12 800 lines
		Time waveform samples	128 up to 262 016 samples
		Windows type	Hann, Hamming, Blackman, Rectangular
		Processing modes	Waveform, Spectrum & Waveform, Demodulation, Long Waveform, Order Tracking
		Available filters	Butterworth, Bessel, Chebyshev

## SDT Mission

SDT provides ultrasound solutions that help our customers gain a better understanding about the health of their factory. We help them predict failures, control energy costs, and improve product quality while contributing to the overall reliability of their assets.

Your SDT Certified Partner



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